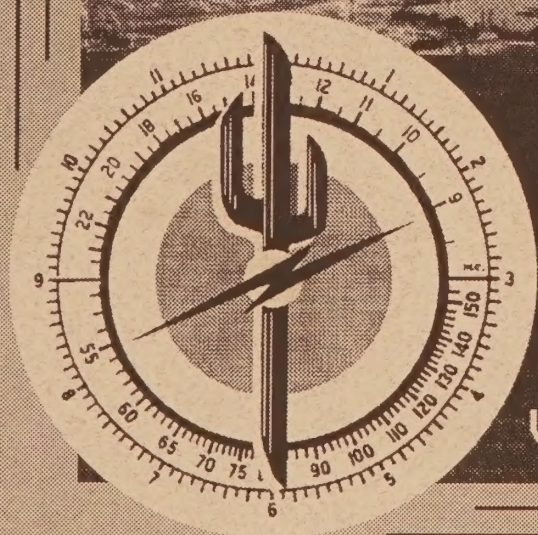
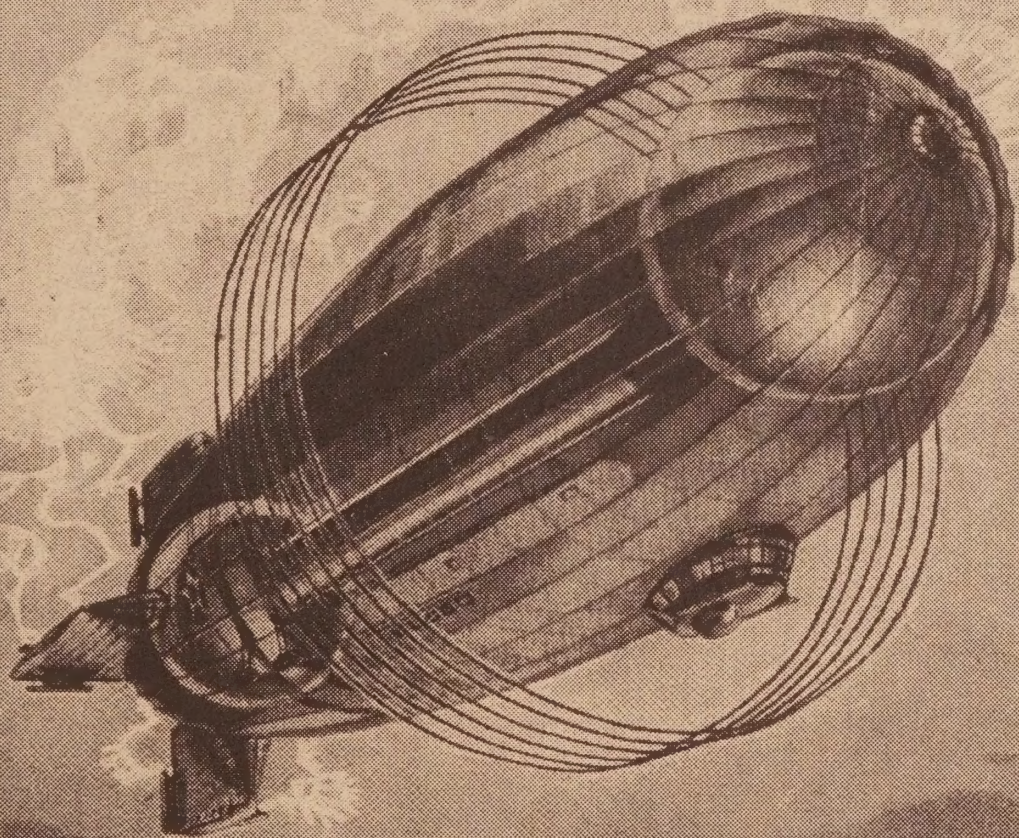


ARIZONA ANTIQUE RADIO CLUB NEWS



Vol XVI, No 4 Winter 1999

3 AARC CALENDAR

4 RADIO CENTRAL *by Harry Hyder*

10 SUPERPOWER *by Harry Hyder*

12 *On the Cover: DO WILD RADIO WAVES CAUSE AIR DISASTERS?* *by Burton Manfred*

20 ANTIQUE RADIOS ENTER CYBERSPACE *by Martin Bergan*

25 CLASSIFIEDS

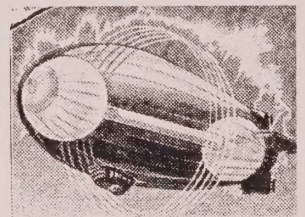
WORLD'S GREATEST WIRELESS OPENED

Long Island Plant Sends Greeting From Harding to 28 Countries.

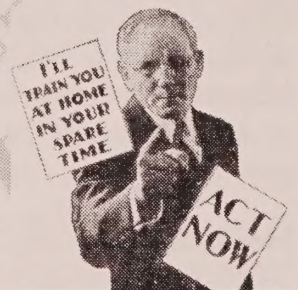
FLASHES HALF ROUND GLOBE

New Plant to Make America Centre of the Radio System of the World, Says Official.

Page 4



Page 12

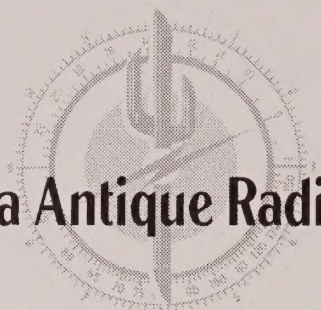


TIPS for the NEW COLLECTOR

Page 20

ARIZONA ANTIQUE RADIO CLUB NEWS

Vol XVI, No 4 Winter 1999



Arizona Antique Radio Club

The Arizona Antique Radio Club was organized in 1983 for the preservation of the history and artifacts of radio and television, and for the advancement of knowledge and appreciation of radio technology and communication. The Club is a non-profit corporation organized primarily for the mutual assistance of radio devotees and collectors in Arizona. Membership, however, is open to any persons who have an interest in radio and television history, preservation, restoration, and collecting.

Meetings are held from October through May and consist of touring collections, presentations of technical, historical or restoration information, thematic displays of radios and the autobiographical experiences of the members. Our antique radio Swap Meets are usually scheduled for Spring and Fall meetings. Members of the Board of Directors are elected at the annual business meeting in May. Most meetings are held on Saturdays in the Phoenix and Tucson areas, and when possible, elsewhere within Arizona.

Membership dues are \$18 (individual) or \$20 (family) per calendar year and provide access to all club benefits including the quarterly issues of the *Radio Club News*. Send dues or membership inquiries to: **Arizona Antique Radio Club, 10513 E. Clinton, Scottsdale, AZ, 85259, phone (602) 860-8951.**

1999-2000 Club Officers

President: Dave Lambert 775-0531
Vice-President: Corrine Wiltsie 357-8954
Secretary: Dennis Craft 860-8951
Treasurer: Steve Smith 831-3095
Editor: Bill Lettow 730-6058
Additional Directors:
 Martin Bergan 274-5895
 David Cain 561-6228
 Con Morton 996-8912

The Arizona Antique Radio Club News is the quarterly publication of the Arizona Antique Radio Club, Inc. It is mailed First Class to current members at the beginning of March, June, September and December.

Contributions: submission of articles, news items, fiction, photographs and other materials relating to radio history and collecting are greatly appreciated, particularly if they have an Arizona connection. All members are encouraged to broaden their interest in the hobby by sharing their experiences, opinions, knowledge and observations with the club through its publication. Send materials for publication to **Arizona Antique Radio Club, 2025 E. LaJolla Dr., Tempe, Arizona, 85282-5910. Phone is (480) 730-6058. Email: lettow@yahoo.com.**

Advertising: classified ads of reasonable length are free to members. Display advertising is also available, contact editor for current rates. Deadlines are the 10th of the month before publication. The club accepts no responsibility for transactions made in regards to published ads.

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Editor: Bill Lettow

AARC 2000 CALENDAR OF EVENTS

APRIL

AARC Election Extravaganza!

April 15th 12:30-2:30 P.M.

**Dave Lambert's House
2125 E. Ranch Rd. Tempe**

not only going to feed you, we are going to have a drawing for some door prizes (AES Gift Certificate, Tubes and Books).

12:30-1:00pm

Hotdogs, chips and pop. Join us for lunch and socializing with your fellow club members.

1:00-1:20 pm

Business Meeting -Elections, Financials and other business.

We will be electing new Board members. The board has voted to allow elections to take place earlier in the year in the hope that more people will participate in the process.

This year the two year terms of David Cain, Dennis Craft, Dave Lambert, Con Morton and Corrine Wiltsie will expire. If you would be willing to serve, or can suggest someone who would be, please let your club officers know.

Some board members have put in many years of service and would like to see some new faces on the Board, so take the plunge and put your name forward.

1:20-2:20 pm

Share something interesting from your collection. Bring a radio, radio related item, tube or whatever from your collection to share with us.

2:20-2:30pm

Drawing. In order to get some of you to an election meeting we are

Please come, bring something to share with the club and make this our best business meeting ever!

Directions

The new Lambert home is in the Circle G Ranch in Tempe near the intersection of Price and Warner. It is on the S.E. corner of E. Ranch Rd. and Shannon.

From I-10/17 exit east at Warner Rd. Keep going east (about 3 miles) till Fairfield. Fairfield is the 4th street on the right after McClintock. Turn right (south) onto Fairfield then make the first left onto E. Ranch Rd.

From Loop 101 South: Take the freeway till it ends and exits onto Price Rd. Stay on Price until Warner Rd. (You will cross Elliot). Turn right (west) on Warner and make the first left onto Fairfield. Take the first left from Fairfield onto E. Ranch Rd.

Phone

(480) 775-0531

MAY

LAST MEETING BEFORE SUMMER

Saturday, May 6, 1pm; location and program to be announced.

SUNDAY, MAY 16, 1920.

*To Build World's Biggest Wireless Here;
6,000-Acre Site Bought on Long Island*

Radio Central

**WORLD'S GREATEST
WIRELESS OPENED**

Long Island Plant Sends Greeting From Harding to
28 Countries.

FLASHES HALF-ROUND GLOBE

New Plant to Make America
Centre of the Radio System of
the World, Says Official.

**TO WIRELESS 1,000
WORDS A MINUTE**

World's Biggest Plant to be
Connected with City Office
by Relay Wire.

NO OPERATORS AT STATION

Transfer Device to be Controlled
Mechanically—Rates for Foreign
Messages Less Than Cable Tolls.

by
Harry Hyder

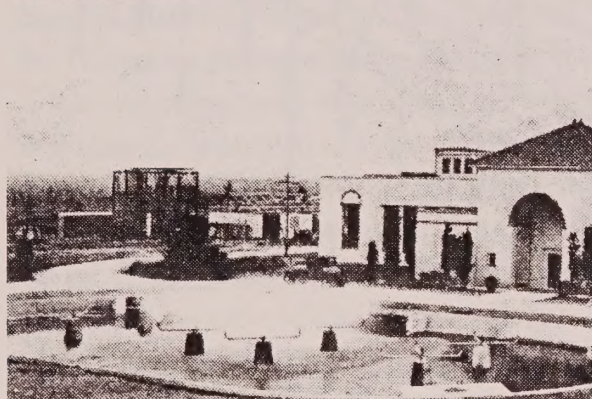
Until the formation of the Radio Corporation of America in 1919 there was no American-owned international communication system. Both German and British companies had built powerful radio stations in the United States, capable of communicating with their home countries.

In 1915 WSL, the German station

in Sayville, Long Island, was shut down by the U.S. Navy because its transmissions were violating American neutrality laws.¹ When the U.S. entered World War I in 1917, the Navy took over the British Marconi stations.

The Navy had been the most heavily involved in radio of any government agency, and promoted the

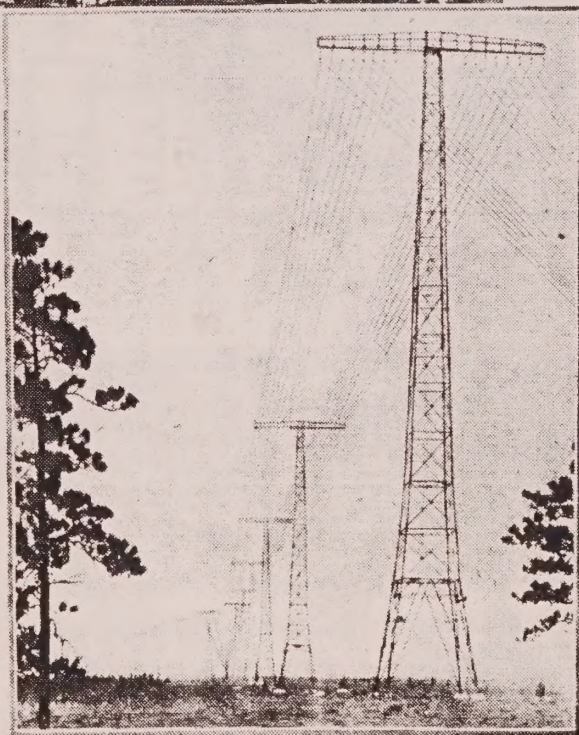
Below is a portion of Radio Central at Rocky Point, Long Island, N.Y. In the foreground is the spray pond used in the water-cooling system of the transmitter. Below right is one of the multiple tuned antennas.



idea of a wholly-owned American radio system, similar to the British Marconi Company.

The logical American organization to sponsor a radio communications system was the General Electric Company. GE had been involved in radio from the beginning. It had done important vacuum tube development, had manufactured much radio equipment during the war, and most importantly, had developed the Alexanderson alternator. This machine was capable of generating 200 kilowatts of continuous wave power and was considered to be the ideal transmitter. Marconi had tried to buy exclusive world rights to the alternator, but the Navy had urged GE not to sell, and they had not.

The most important part of the plan was for GE to purchase the assets of the American Marconi



Company and negotiations started. The German station, WSL, had already been bought by the Navy and was being operated with the call NDD. GE set up the Radio Corporation of America as a separate company. RCA did obtain the Marconi assets and part of the payment to Marconi was paid in RCA stock.²

¹ Evidence for the non-neutral transmissions of WSL was supplied by Charles Apgar, 2MN, a ham in New Jersey. He had recorded WSL's transmissions on wax cylinders.

² The complete story of the acquisition of American Marconi by GE is told in *The Continuous Wave* by Hugh J. Aitken, Princeton University Press, 1985.

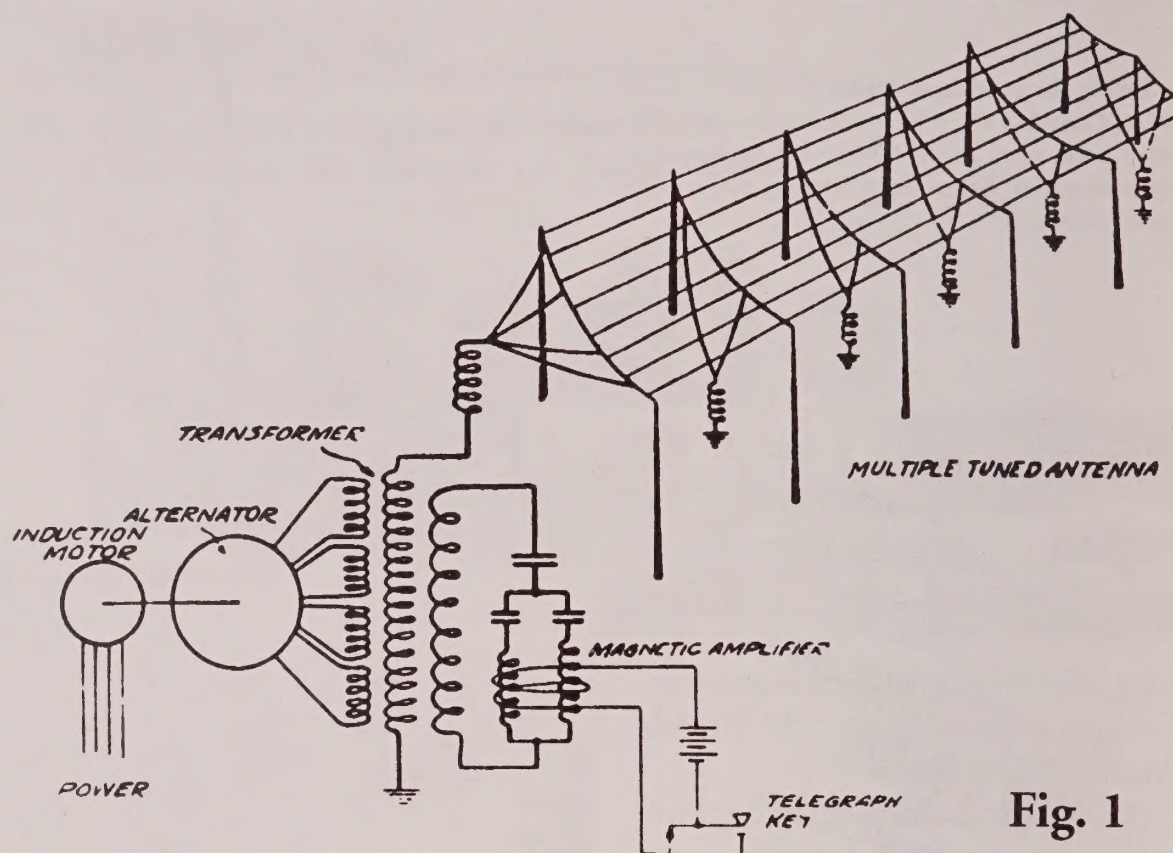


Fig. 1

AT&T was also brought into RCA. AT&T owned the DeForest triode patent and free use of this patent was considered to be necessary for a radio system.³

In 1919 radio meant only one thing: communication. Broadcasting was still in the future, and few could imagine how soon it would develop and the tremendous impact it would have on the radio industry.

The newly-formed RCA immediately started making plans for an enormous radio station, capable of communicating with any part of the world. The station would be located near New York City, the business and financial center of the country. A very large tract of land on Long Island was purchased, about 50 miles east of the city. The site included 6,400 acres, almost ten square miles. It had a large frontage on Long Island Sound.

The station would be called Radio Central.

In 1919 conventional engineering thinking was that for long distance communication, long wavelengths were necessary. Long wavelengths required very large antennas. The plan was to have a central building containing the transmitters with twelve antennas radiating out from it like the spokes of a wheel. Each antenna would be over one mile long. The antennas would be supported on towers 400 feet high, with 150 foot cross arms. The antennas would be multiple tuned, an idea from the

³ AT&T had bought DeForest's triode patent in 1912. In 1916 the court had ruled that to manufacture triodes it was necessary to be licensed under both the DeForest patent and Marconi's Fleming valve patent. GE acquired rights under the Fleming patent in its purchase of American Marconi.

fertile brain of Ernst Alexanderson, designer of the alternator. Multiple tuning meant that at each tower there would be a downlead going to a buried ground. The downlead would be tuned to the operating frequency. This arrangement reduced the loss resistance. It improved the efficiency because the radiation resistance of the antenna was not more than one ohm. These antennas had extremely narrow bandwidth, a very high reactance to resistance ratio, or high "Q".

Fig. 1 shows the general arrangement of one antenna.

Initially, two antennas were erected and two Alexanderson alternators installed at Radio Central.

Development of the alternator under Ernst Alexanderson had started at General Electric when a one kilowatt unit had had been made for Reginald Fessenden for use in his famous Christmas Eve broadcast of 1906. Development of the alternator had continued, and by 1917 a unit producing 200 kilowatts was built. Fig. 2 is a simplified cross-section view of the alternator. A slotted thin iron disc was rotated between the poles of an electromagnet carrying

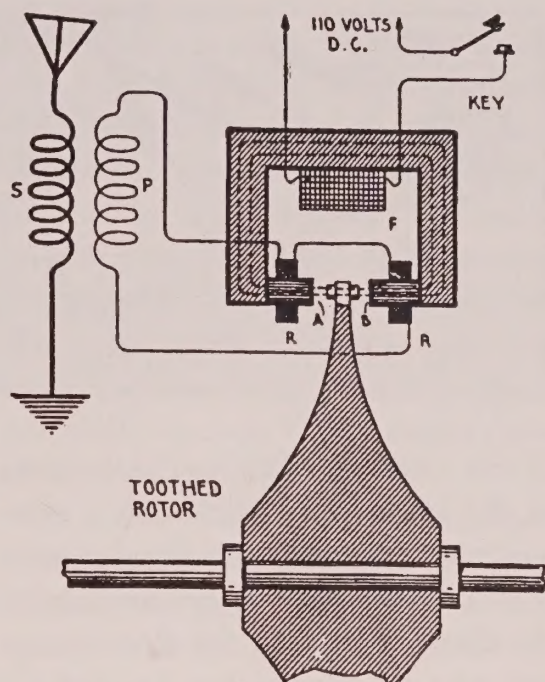


Fig. 280—Details and Connections of the Alexanderson Radio Frequency Alternator.

Fig. 2

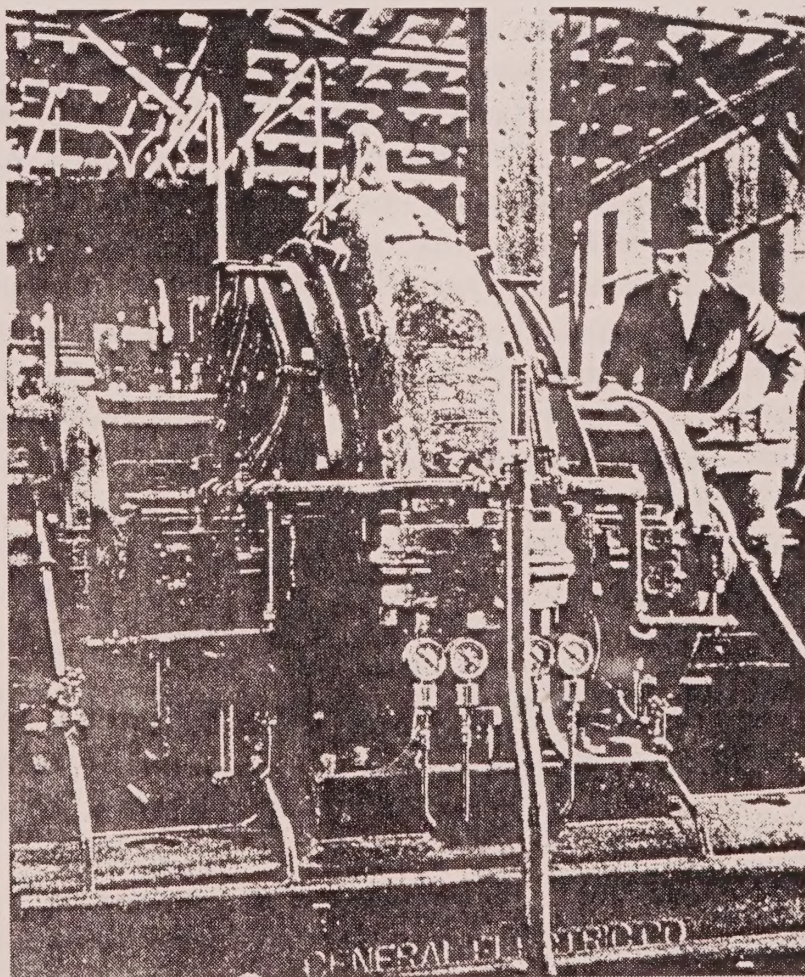
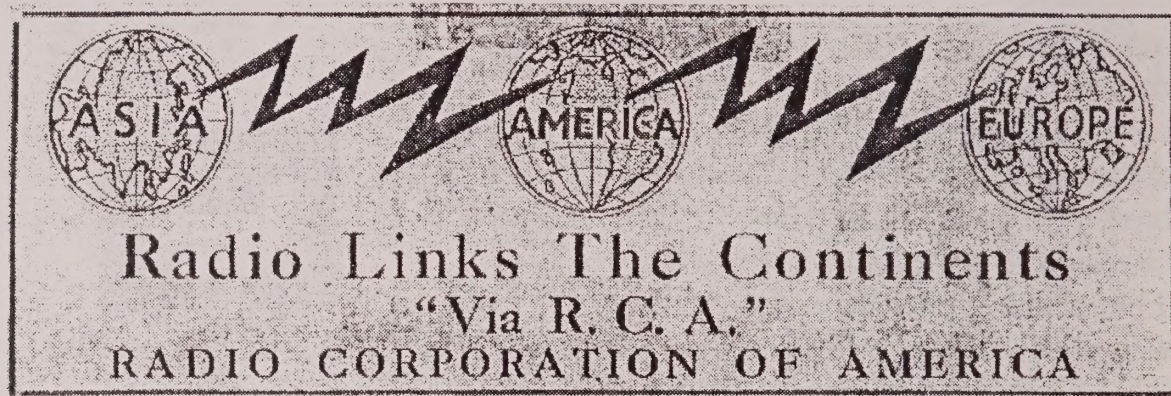


Fig. 3



direct current. The multiple slots in the rotor were filled with a non-magnetic material, for aerodynamic reasons. The multiple slots modulated the direct current in the electromagnet, and the alternating component was induced in the output winding. The alternator was a triumph of electrical and mechanical engineering.

The output frequency was proportional to the speed of the rotor, and this had to be very closely controlled because of the very narrow bandwidth of the antenna. Alexanderson designed the necessary speed controller and also a method of keying the alternator at speeds of several hundred words per minute.

Fig. 3 shows Alexanderson looking at his handiwork. A single alternator and its auxiliary equipment weighed about 50 tons.

The alternators could be operated at speeds producing output frequencies between 25 and 15 kHz (wavelengths 12,000 to 20,000 meters).

The receiving station was located at Riverhead, some miles away. Radio Central and the receiving station were connected by telephone lines to the RCA office on Broad Street in lower Manhattan, where all message traffic

originated and was received.

Radio Central opened for business on November 5, 1921, with a message from President Warren G. Harding. David Sarnoff was at the key.

No more than the original two alternators were installed at Radio Central and only the two original antennas were erected. They operated so efficiently that they could handle all the volume of traffic at that time.

By 1921, the alternator was becoming obsolete. High power vacuum tubes were being developed which, when used in multiple, could produce as much power as an alternator, and much more economically and efficiently. Only 21 alternators were ever manufactured. Today, only one exists. It is in a museum in Sweden.

Another technological revolution was taking place. In 1919 when Radio Central was planned, it was assumed that only very low frequencies were usable for long-distance communication. In the early 1920s, radio amateurs and commercial interests were discovering that short wavelengths, once thought useless, were quite well suited for long distance work, although they did have some disadvantages. While the long wavelengths did not change much

diurnally or seasonally, short waves varied quite a bit. This meant that for continuous communication, frequent changes in frequency would be necessary. However, the short wave equipment and antennas were so much more economical than the long wave equipment that the necessity for frequent frequency changes was a small price to pay.

Although during the 1920s most commercial communication shifted to the short waves, the long wave equipment was still maintained. There were occasions when all short wave circuits were unusable because of freak atmospheric conditions. Then, the old alternators would be started up and communications continue.

Short waves had the additional advantage that highly directive antennas of modest size could be used, concentrating the transmitted power in a desired direction, further increasing efficiency.

The unanticipated growth of radio broadcasting starting in 1921 began to change the nature of RCA away from a narrowly focused commu-

nication company. Westinghouse had joined RCA in 1921, bringing with it Armstrong's regeneration and superheterodyne patents. RCA began to become a sales outlet for radio receivers and vacuum tubes manufactured by GE and Westinghouse. RCA also began to build and operate radio broadcasting stations. These gradually became RCA's major commercial activities.

In 1928 RCA set up a separate company, RCA Communications, so that the parent company could concentrate on activities connected with broadcasting.

By the 1950s, because of advancing technology, Radio Central was becoming obsolete. Eleven of the original towers were demolished. The two alternators had been idled in 1948 and scrapped in 1950. The final straw was the establishment of satellite communication in the 1960s. The last tower was demolished in 1977, but had only been used for microwave relays since the 1950s.

RCA, of course, is no more. It is now back where it started, a part of the General Electric Company. ❶



SUPERPOWER

BY HARRY HYDER

At the beginning of the broadcast era, most stations were fairly low power. As the 1920s progressed, higher power stations appeared on the band, and by the early 1930s there was a number of fifty-kilowatt stations. One of them was WLW, the station of the Crosley Company near Cincinnati, Ohio. In 1932 Crosley requested the Federal Radio Commission (predecessor of the FCC) to permit it to raise its power to 500 kilowatts on an experimental basis. Permission was granted.

By that time, design parameters for a 50 kW station were well established, but 500 kW was virgin territory. Crosley awarded a contract to RCA to design and build the station. This, of course, would be an amplifier and modulator, since the original WLW transmitter could act as a driver.

It was decided to use twelve RCA type 862 tubes in the RF amplifier. The 862 was a 100 kW external—anode water cooled tube. The amplifier was arranged as three separate amplifiers in parallel, with each amplifier using four 862 tubes in push—pull parallel. Each of the three amplifiers had its own input

and output tuned circuits.

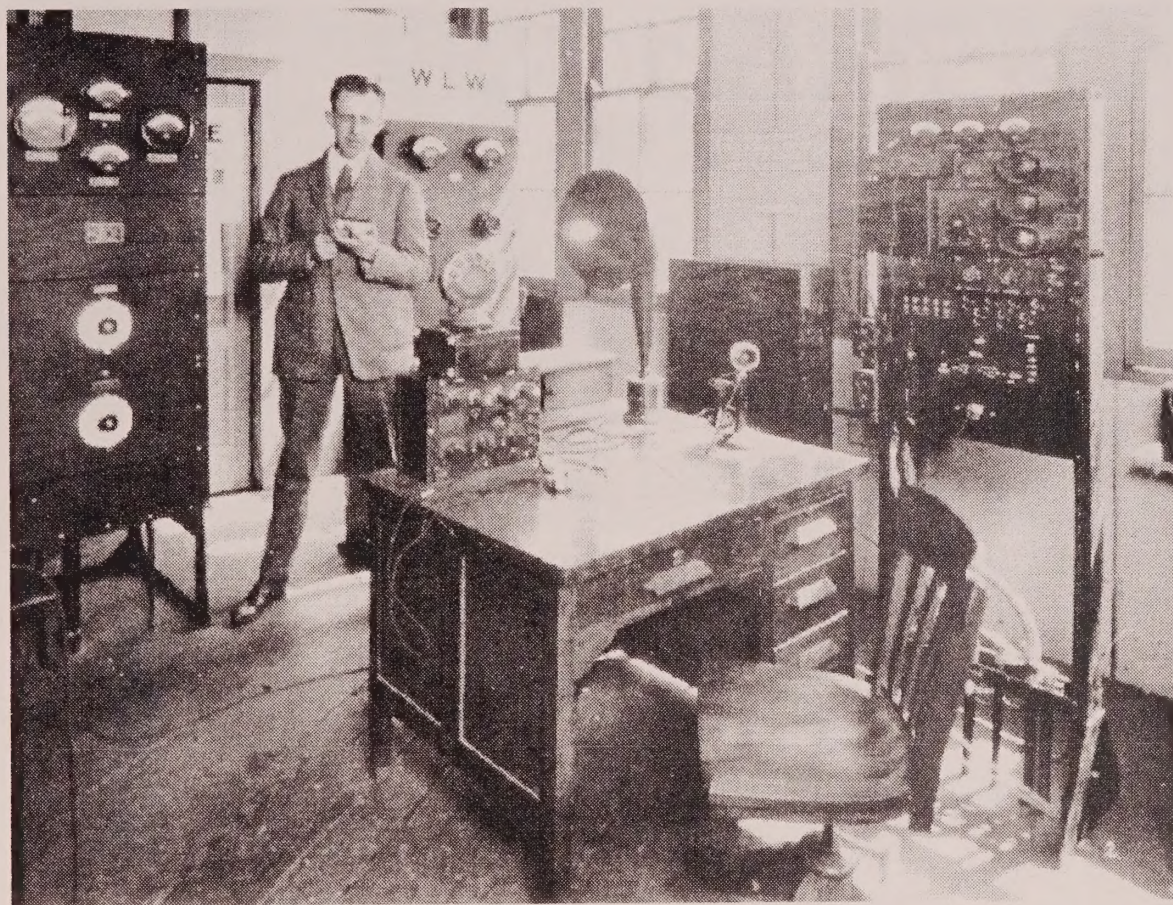
The modulator used eight more 862 tubes, arranged in two groups of four each in push—pull parallel. The modulation transformer had two separate primaries. It weighed 50 tons.

The total of twenty 862 tubes required 500 gallons of distilled water to cool their external anodes, and 700 gallons of city water to cool the distilled water. There was a spray pond outside the main building to cool the city water. In addition, 22,500 cubic feet per minute of air was used to cool other parts of the transmitter.

The four 862 tubes needed 12,500 volts on their plates. This was supplied by a three-phase full-wave rectifier using specially designed mercury vapor rectifiers. Three 1500 ampere 33 volt dc generators in parallel supplied filament power to the tubes. These were driven by three 75 horsepower motors. The local power company built a separate substation for the exclusive use of WLW.

In operation, average power consumed by WLW was 1,800 kVA.

The WLW antenna was a single vertical element standing 830 feet



Powel Crosley, the "Henry Ford" of radio.

above the surface of the ground. The antenna was diamond shaped, wide at the center and tapering to the top and bottom. The base rested on two porcelain insulators, arranged to permit a slight amount of antenna movement during high winds. Eight guy cables were connected to the center of the antenna. The antenna itself weighed 136 tons, and with the downward pull of the guys put a force on the base insulators of about 450 tons.

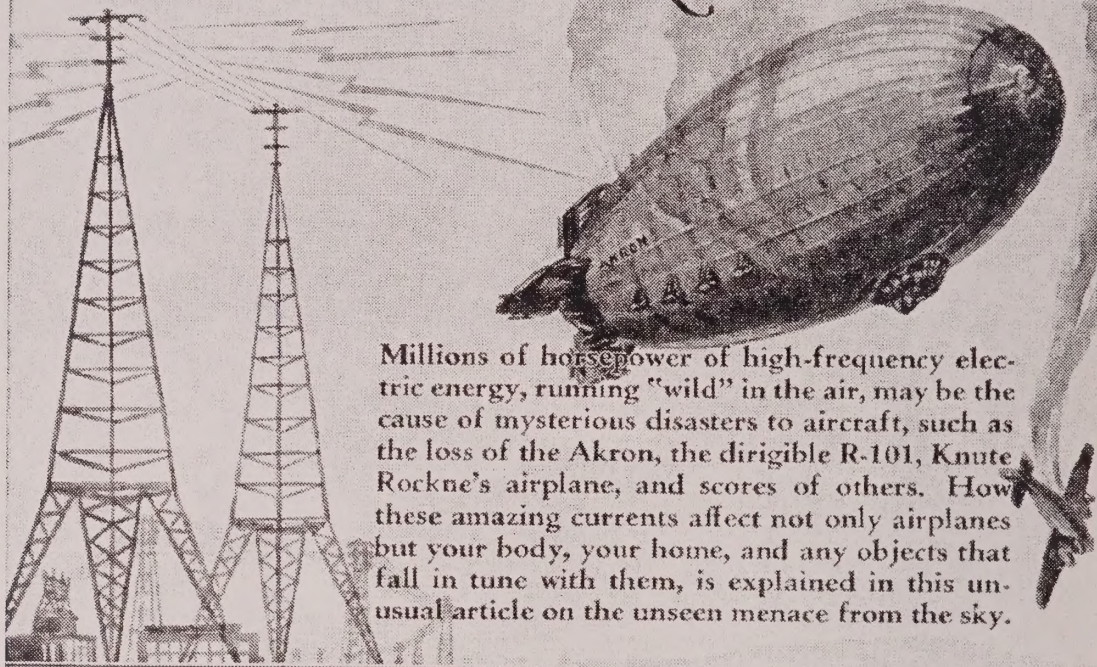
Power was fed to the antenna from the transmitter by a concentric transmission line made of large diameter copper pipe.

WLW's frequency was 700 kHz, 429 meters. The antenna was 830 feet, 253 meters. Thus the antenna

was 0.59 wavelength. This height was optimum for maximum ground-wave coverage with minimum high-angle radiation.

WLW started operation at 500 kW in 1934 and continued until 1939. Surveys had shown that WLW was the most listened to station over a 13 state area. Many normal power stations in that area complained that the high power gave WLW an unfair advantage. Their complaints reached Congress, which sent a "memorandum" to the FCC recommending that WLW's license not be renewed for 500 kW. The FCC complied, and WLW was forced to revert to its original 50 kW. ❶

Do WILD Radio Waves

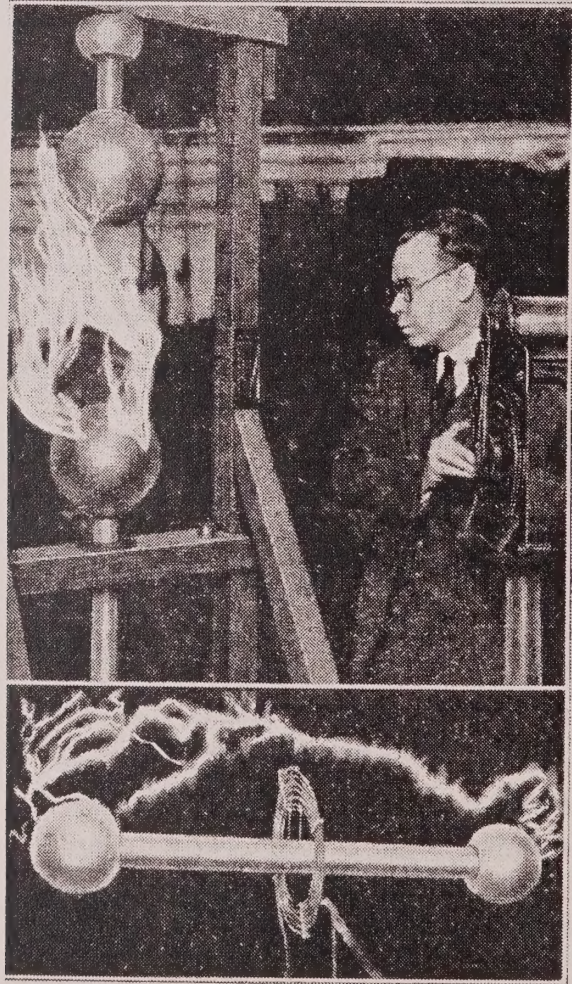


Millions of horsepower of high-frequency electric energy, running "wild" in the air, may be the cause of mysterious disasters to aircraft, such as the loss of the Akron, the dirigible R-101, Knute Rockne's airplane, and scores of others. How these amazing currents affect not only airplanes but your body, your home, and any objects that fall in tune with them, is explained in this unusual article on the unseen menace from the sky.

by **BURTON MANFRED**

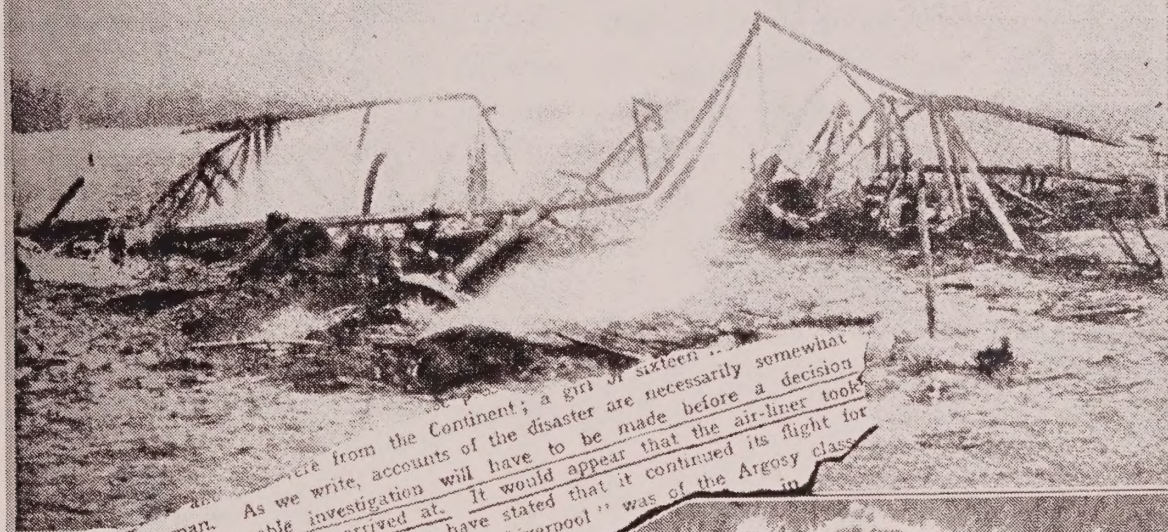
(This article appeared in the July 1933 issue of Modern Mechanix and Inventions. It shows once again that doomsday predictions always go hand-in-hand with rapid expansion of new technology -Ed.)

The radio experts of the United States Navy have recently completed a series of astounding experiments, experiments that prove far beyond the shadow of human error that there is a new menace in the sky. Hour after hour, day after day countless thousands of horsepower of high-frequency electric energy is being pumped into the air by great radio stations and other high-frequency machinery which has become a part



Destructiveness of high potential currents is demonstrated in these Tesla coils. Tremendous voltages are built up by induced currents until they break loose and jump the gap.

Cause AIR DISASTERS?



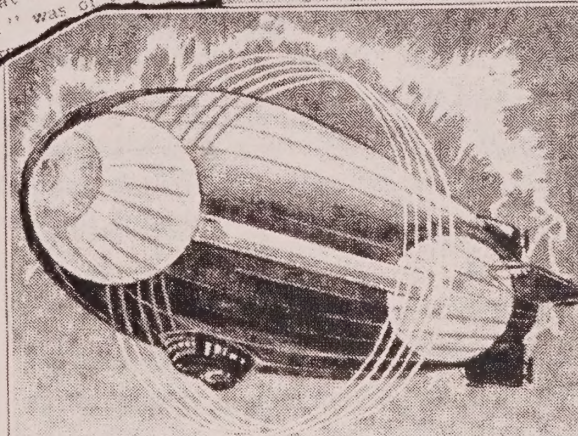
...a Belgian man. As we write, accounts of the disaster are necessarily somewhat confused, and considerable investigation will have to be made before a decision is to the cause of it can be arrived at. It would appear that the air-liner took fire while in the air, and eye-witnesses have stated that it continued its flight for over a mile before it crashed. The "City of Liverpool" was of the Argosy class, a twenty-two-seater, three-engine biplane, with a...

Recent example of an airplane crash whose cause remains an official mystery, as indicated by newspaper account, is that of the "City of Liverpool" crack multi-engined plane on London-Continental service. Note that it "apparently took fire in the air" - a circumstance which may well have been caused by wild radio waves through high-frequency induction. In the column at right, the phantom view of a Tesla coil, superimposed over the dirigible, indicates how high potentials can be built up in metal framework of such ships as the Akron until a point of destruction is reached.

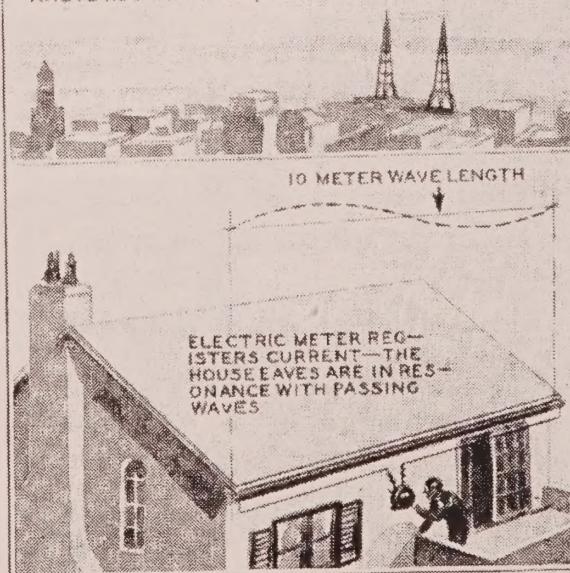
of our civilization.

Only an infinitesimal speck of this prodigious output of energy is consumed by the radio receivers of the world. What happens to the rest? Does it become a wild and roving source of death and destruction or does it rush into the frigid voids of space never to return to the earth?

(Continued)

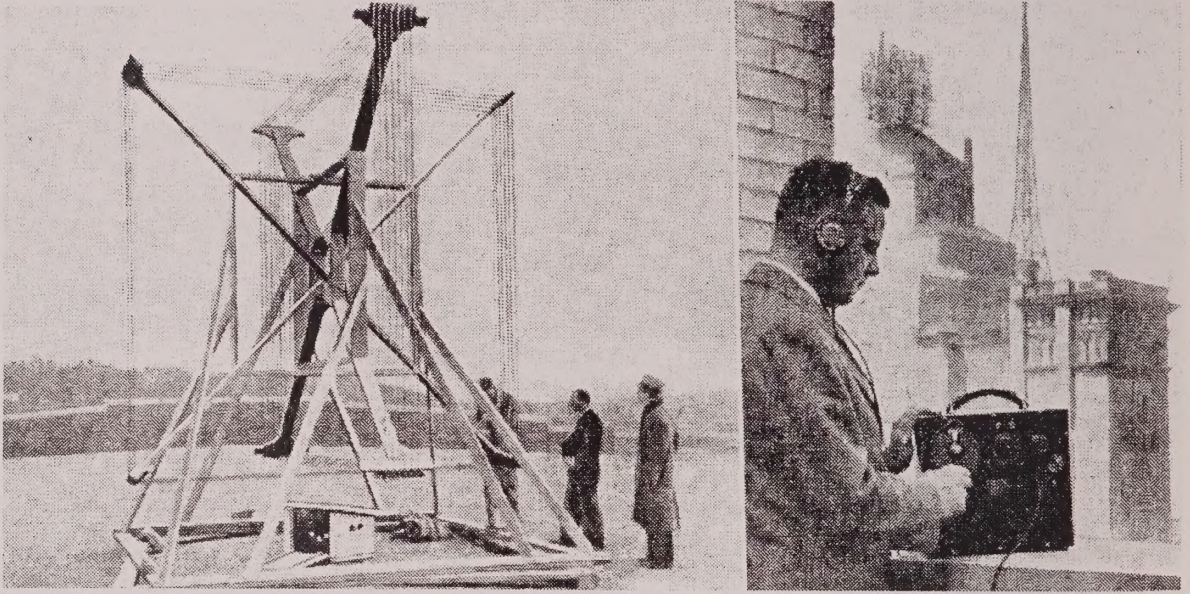


DIAGRAMMATIC VIEW SHOWING HOW "WILD" HIGH-FREQUENCY CURRENTS MAY HAVE CAUSED MYSTERY AIR DISASTERS—SUCH AS DESTRUCTION OF AKRON, R-101, KNUTE ROCKNE PLANE, AND OTHERS.



Copper house eaves, in resonance with passing waves, can set up sparks that can set the building afire. Short radio wavelengths are "in tune" with many common objects.

Distant Radio Station Sets Up High-Frequency Currents in Skyscrapers



Left above, novel radio antenna for broadcasting direction signals to airplanes. This is but one of hundreds of agencies which pour wild high-frequency electric energy into the air. Right above, measuring electromagnetic field of radio transmitter a few blocks away. It is close enough to set up powerful high-frequency currents in the framework of surrounding skyscrapers. Potentials of several thousand volts are often found.

What Happens to Wild Energy?

Engineers have found that it does both, great quantities of it being absorbed by living and inanimate objects and in these objects it is detectable as surging forces of electric current. Even the man-in-the-street absorbs a part of this energy and the tissues of his body are seats of tiny electric currents in tune with the powerful broadcast transmitters of the land.

It is only when these wild waves reach large metal structures, however, that danger develops. In such structures electric currents often reaching a potential of several thousands of volts are generated and sparks or discharges may be produced that will cause fire or explosion.

These new discoveries of radio

engineers naturally bring up the subject of the mysterious airplane and sea accidents that have gone unsolved during the past few years. What of the Naval collier *Cyclops* that was swallowed up by the sea? Was it a victim of its own radio transmitter and did these powerful fugitive currents cause an explosion on board that obliterated it from the face of the world?

Mysterious Airplane Accidents

We have the same right to put the same question in connection with a number of very mysterious airplane accidents that have occurred during the past few years, notably the one in which the famous and lamented coach, Knute Rockne, was killed. The airplane is particularly susceptible

because of the inevitable gasoline tank. Sparks by induced current at this point will be bound to produce fatal results if the ship is afloat.

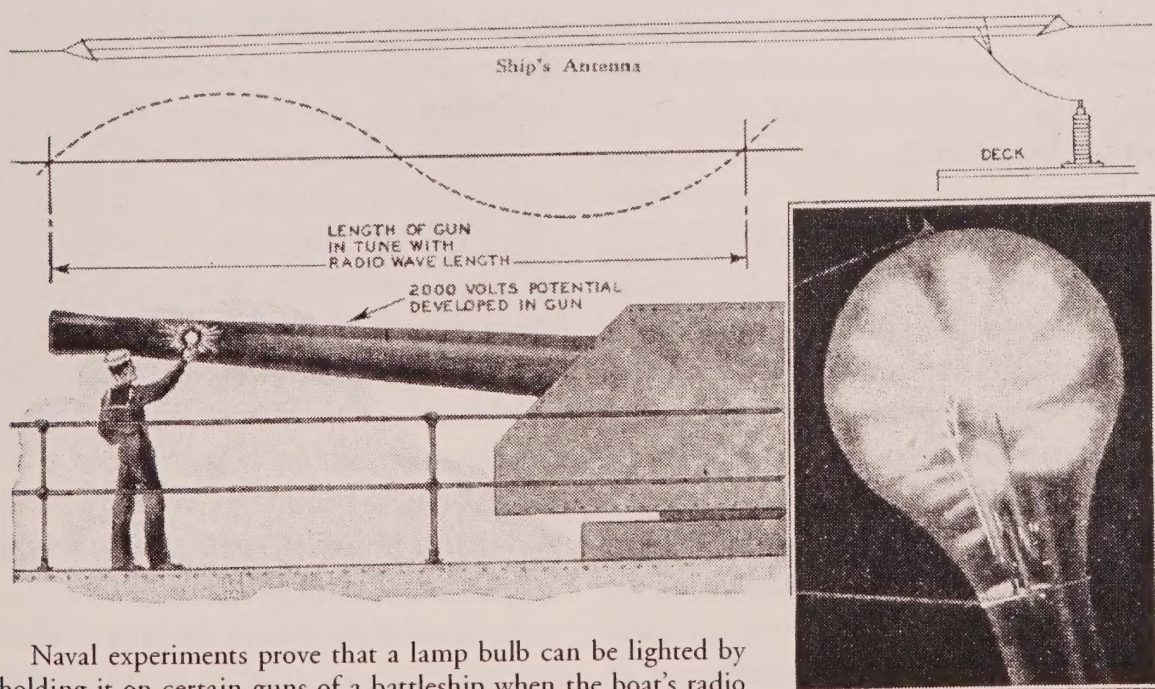
It has long since been known also that large steel buildings in the vicinity of broadcasting stations suck in tremendous quantities of this energy and that they become veritable electric dynamos. So potent does this radiation become that small electric lights may be lit by wireless under the antennae systems of large radio stations.

Most recent of those which come to mind is the disaster of the dirigible *Akron*, the precise cause of whose collapse into the Atlantic is unknown at this writing. The British dirigible *R-101*, which fell in flames in France, still presents a mystery as to the cause of its destruction, since the ship was very carefully fireproofed

and supposedly immune to this form of destruction. The series of such catastrophes could be endlessly augmented by a listing of airplane disasters in which the planes apparently took fire in the air from unknown causes.

The natural tendency has been to put the blame on gasoline, accidentally ignited—this in spite of the fact that every precaution known to science is taken to prevent just such catastrophes. The appalling number of these accidents which have had to be written down as mysteries demands that serious credence be given the experiments which indicate that tremendous electrical forces unleashed in the sky through radio stations and other mediums are agencies of destruction.

On this month's cover of this magazine, the artist has illustrated



Naval experiments prove that a lamp bulb can be lighted by holding it on certain guns of a battleship when the boat's radio transmitter is operating. Voltages as high as 2000 are set up. At right, nitrogen filled bulb glowing when suspended, without direct contact, near a source of high-frequency energy.

the principle by which a dirigible could be destroyed by wild electric currents. He has superimposed over the body of the dirigible a Tesla coil of the type used in generating artificial lightning discharges, to portray graphically the tremendous electrical forces which roam the skies.

Those who understand electricity at all know that when a metal conductor is brought into proximity of a wire carrying alternating current, a second current will be set up in that conductor. This is called electromagnetic induction and at the higher frequencies such as those used by the newer electric furnaces and the radio stations, to say nothing of X-ray tubes and some of the new therapeutic equipment in hospitals, these induced currents not only become more powerful but more mysterious and elusive. Especially is this the case when the electric dimensions of the conductor in the vicinity of a powerful radiator are such that a condition of resonance or "tune," as the layman calls it, is set up between the two.

Long Wavelengths Not So Dangerous

In the old days of radio when large wavelengths were used, wavelengths so great that there was nothing on earth in the way of man-made metal objects to fall in tune with them, there was little danger from this source, but today the wavelengths have been pushed down into a region of smallness where they compare to the ordinary things and appliances that we use every day.

A five-meter wave just about "fits"

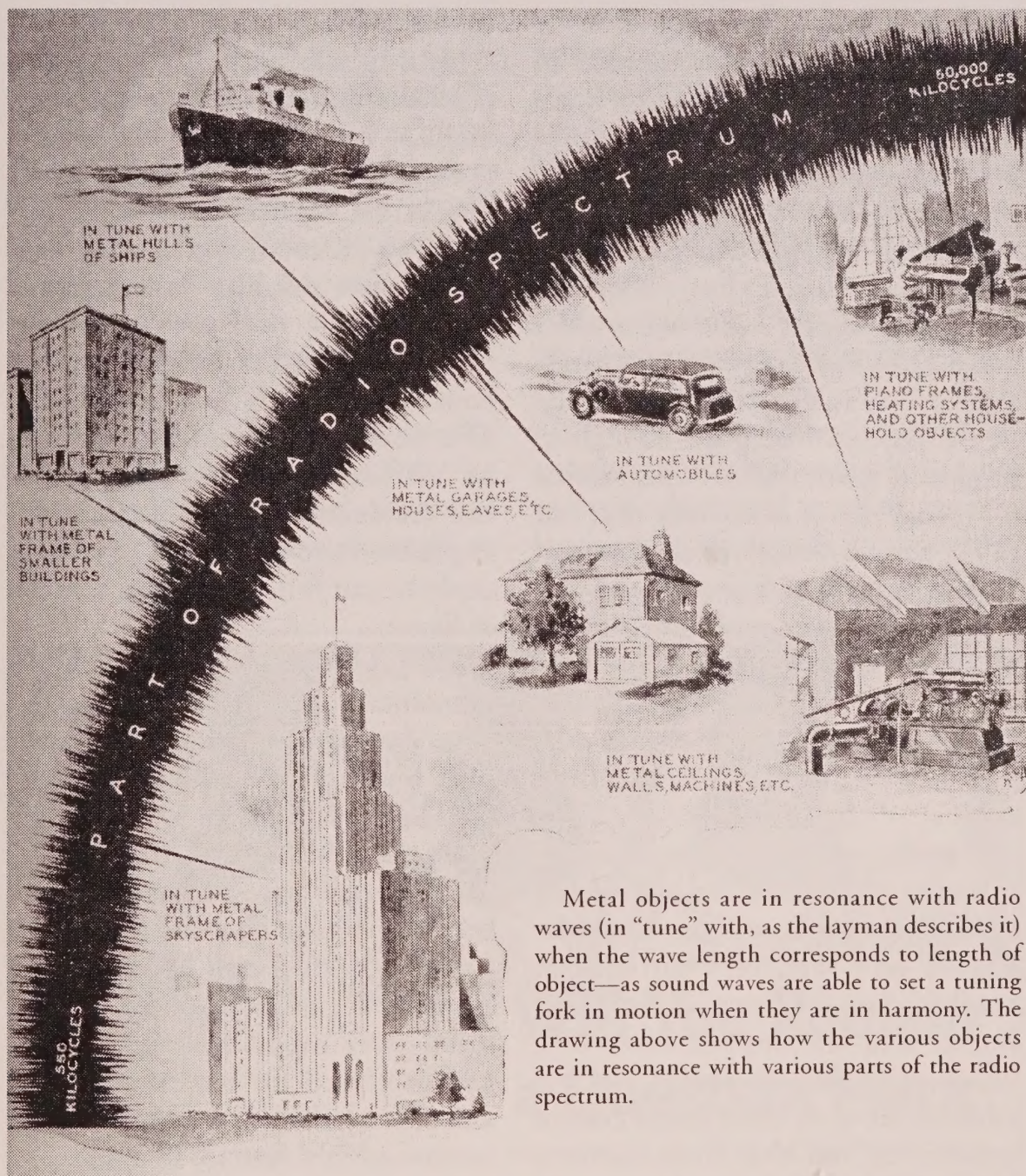
our car and wavelengths a little above this are accommodated by the metal frames of the average airplane. With the tendency of radio engineers to push wavelengths lower and lower the day is rapidly approaching when ordinary household objects will fall in tune with sources of energy that will become real hazards to daily life, for while these wavelengths are being made shorter and shorter, the power used is being expanded at high rate.

Let us consider for a moment the startling facts that were discovered by our naval experts in connection with an investigation of the currents set up in large guns on board ship while the radio transmitter was operating. Most of us look upon a voltage of 2000 as a very respectable amount of electricity and we should perhaps be very surprised to be told that voltages of these magnitudes are set up in some of the big guns and that these guns, large as they are, may be exploded by such induced energy.

In ordinary cases, 24-volt electric lights may be lighted on certain of the guns of a battleship when the radio transmitter is working. In such cases, where the gun is mounted close to a powerful radiator of this type, shielding is of little or no use, for even in the case of the larger bores that were breech-protected with turrets, powerful electric currents were found surging back and forth in them.

It should be borne in mind that under such favorable conditions, the guns or other metal objects on shipboard do not need to be in electrical tune or resonance with

How Metal Objects in Everyday Use Fall in Resonance With Radio Waves



Metal objects are in resonance with radio waves (in "tune" with, as the layman describes it) when the wave length corresponds to length of object—as sound waves are able to set a tuning fork in motion when they are in harmony. The drawing above shows how the various objects are in resonance with various parts of the radio spectrum.

the source of radiation. The length of guns on board our battleships today are now comparable to quarter wavelengths or multiples of quarter wavelengths of the type of wave generated by naval radio equipment. Such conditions make possible the

creation of standing electric waves by excitation from a nearby radiator.

Dangers of Gasoline

But this is but one of the hazards that must be faced. Some idea of the powerful stray currents that may be

produced in airplane structures may be had when it is said that the Navy experts found that the primers of airplane wing-tip flares could be set off when the plane was exposed to a high-frequency antennae field. This was not only done but currents powerful enough to light the airplane running lights were also produced.

Research of a most convincing kind has demonstrated that resonance between a distant radio transmitter and a gasoline filling hose may reach a point where the current induced in the hose will be great enough to produce a spark and set the gasoline off. From this it is obvious that our radio age and our much vaunted gasoline age are a bit at odds and that with the growing use of shorter waves of the same length as gasoline hose some newly invented precautions will be necessary to protect not only property but human life and limb also.

It is the unexpected results and places in which these strange electric currents are produced that make the hazard very real, very difficult to combat. For instance, it has been found that the copper eaves of a house will have powerful electric currents set up in them under certain conditions, and that these currents are great enough to produce sparks that will set the building afire.

Metal garages, steel walls and roofs, ships' hulls, and steel ceilings, as well as automobiles and railroad equipment become unexpected and unsuspected carriers of death and disaster. So mysterious and incomprehensible are the many and curious

manifestations of electric current of this nature that ignorant attempts at prevention may easily do more harm than good.

During the past few years and particularly since we have had commercial aviation, there has been a rather large number of aerial accidents of a rather mysterious nature, accidents which could not be accounted for by mere machine failure or the failure of any vital part of the airplane. Time and time again, experts have examined the earthly remains of a once proud man-bird only to be baffled as to the real cause of the accident. On several occasions airplanes have been seen to merely explode and fall to earth in a streak of flame.

It would, of course, be rather rash to maintain that all of these accidents were due to high-frequency induction, but it seems to be a fairly well established fact that a large number of them have been caused in this way. In some cases it has no doubt been the ship's own radio that sent it plunging to its doom. In other cases, an innocent radio operator perhaps miles away might have pressed his key or closed his antennae switch and sent a half-dozen souls streaking earthward in a furnace of flame.

Protective Measures

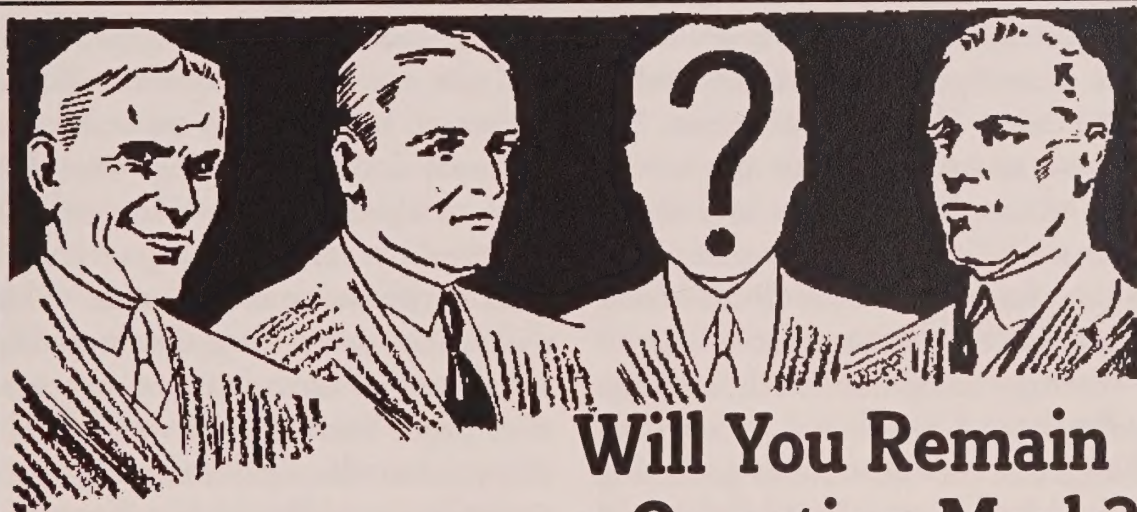
The question naturally arises, will future civilization have to make sure that it is out of tune with the high-frequency generators of electricity? With the wavelengths of such equipment getting to a point where even our pocket pencils might be in

resonance with them, this is by no means a fantastic question. If these developments go on, and there is certainly no indication of an abatement, we shall simply have to resort to the use of insulating materials. These materials will be used in metal objects in such a manner that they will break the objects up into a distinct number of electric parts. In such a way, present day objects that are now in tune or in resonance with our commercial wavelengths would be thrown out of tune.

If anyone doubts the statements made above, let him witness the experiment whereby such powerful induced currents are permitted to

heat a frying pan sitting on cake of ice and to actually fry eggs with heat produced in this strange manner. In such cases, powerful electric currents are set up in the frying pan because the powerful magnetic lines of force are permitted to cut through it. The generated current in the frying is naturally short-circuited and by an effect called hysteresis, heat is produced.

One never knows where these phantom currents are surging back and forth but of their presence engineers have no doubt, and thereby still another complexity, something more to worry about and to guard against, is added to our already complex life.



Will You Remain a Question Mark?

No, your face will be filled in when you write for the Radio Club News! Your club's publication needs your articles, stories, photos, technical tips and radio wisdom to fill these pages.

Write something about your favorite radio, a clever deal, a masterful restoration, a swell swap meet. Send old pictures (we won't hurt 'em) of people and their radios. We can use before and after pictures and stories to go with them.

Want to write but need an idea or an assignment - we've got plenty to go around. Even if you haven't written before, you have opinions and knowledge that other club members would enjoy. Turn that ? to a ! and contribute to the RCN today.



TIPS for the NEW COLLECTOR

During the past couple of years a noticeable change has been occurring in the exchange process by collectors and dealers with regard to antique radios as well as every other type of antique item and most other retail sales. Enter the Internet. It's proving to have a serious impact on swap meets, live auctions and direct personal transactions in that these events and processes are diminishing in attendance and interaction.

Internet companies such as eBay, Amazon and Yahoo! are causing big changes in the old style of gathering and exchanging collectibles. I will keep this article confined to the activities of antique radio collecting which I began to investigate via the Internet about eight months ago. I was astounded at the amount of material being offered for direct sale by businesses and private collectors through their own web sites. A few are listed at the end of this article.

However, the greatest method of selling, and clearly the most profitable

Antique Radios Enter Cyberspace

by Martin Bergan

has been the auctions. Many web companies offer auction facilities, but for antique radios and associated material, the largest by far is eBay. The system works amazingly well, and the obvious complexity of the software required to operate the auctions is overwhelming. One can browse through any category he chooses by selecting a particular search criterium such as "radio." This will bring everything that uses the word "radio" in the title of any auction page. You can select to include the written descriptions in the auction page as well which will greatly expand the coverage. But you will also get equipment like two way radios, military radios, cell phones, Walkmans, and anything else that falls into the category from any group and any era. This will provide typically over a hundred pages of lists at fifty items per page. I find this becomes drudgery because it takes hours and hours to read through so much material, most of which

is not of interest. EBay recognized this situation and made it possible to eliminate unwanted categories by "programming" the search request. They provide easily understood directions to do this. You can eliminate categories by using the typical descriptive word for it such as "record" or "cassette" or "CD" or even brand names like "Sony." We are not likely to find Sony anywhere in our search for vacuum tube antique American radios!

It is possible to select a particular category of radio by manufacturer or type or style. The search page allows such narrow choices. I have selected and bookmarked such manufacturers as RCA, Motorola, Zenith, Atwater Kent and Arcturus. I have bookmarked types such as Cathedrals and Catalins. Bookmarking is a method provided by all internet browsing software (America OnLine, MS Explorer, Netscape Navigator, etc) which generates a list of the items you wish to return to readily without going through the entire search process over and over. It does it for you in seconds with just a click of the mouse. Again, these selected categories can be narrowed by eliminating unwanted segments. For example, "Arcturus" proved to be a problem because there is a European rock band named Arcturus which is apparently quite popular there and sells CDs, T-shirts, posters and other typical paraphernalia. Another is an author who writes science fiction and frequently uses the name of the star, Arcturus. I have eliminated these by programming words that always

appear such as the author's name, and the label "CD" and "disc" and "cassette", and "shirt", etc. The program then bypasses any auction title and description that uses these words. I will include as wanted the word "tube." This then provides a list of auctions for Arcturus tubes with only an occasional "violin"! Once this is set up and bookmarked, the user can recall the list page at any time. The same is true to find particular sellers that you may encounter frequently. I have found several private sellers who often have radios of interest to me, so I bookmark the auction list page of that seller and can then view it quickly whenever I wish.

There are many short cuts that help to find the kind of auctioned item in which you may have an interest. These processes allow you to find the radios but then there are other procedures and cautions to observe. If you find a radio that you can't live without, you decide to bid on it. If you have never done this before, you must first sign up with the auction company you are looking at. For simplicity, I will stick with eBay because I have most of my experience with that company. They have a simple procedure to follow to sign on. It involves providing the usual information; name, address, phone number, e-mail address, and then selecting an identifying name for use in buying and selling in the auction. Many people simply use the e-mail address. Many use an invented name or part of their own name or initials. You must also create a password which you use any time you place

a bid.

Once signed up, you can bid to your heart's content virtually forever. EBay and the other companies provide plenty of detailed information to you when you sign up regarding laws, rules and regulations, their policies, and processes should you become an unhappy camper for some reason. This information should be read thoroughly as it can affect how you handle the auctions.

This whole process can be a lot of fun and bring very satisfying results as long as you are careful. Read everything provided on the auction page. Watch out for the "fine print." There can be restrictions on shipping or payment methods. There may also be defects stated about the product being offered which could be missed if you don't read it all carefully.

There is a lot of competition. You will have typically at least several others bidding on the same item with probably as much determination as you have. You must consider how much you are willing or able to spend in this auction. If it gets above that limit, bite the bullet and quite bidding. I have found myself battling very determined bidders for some items and have spent more for the item than it will ever be worth. This is a decision that must be made at the time of bidding. News articles have shown people who have gotten so "hooked" on Internet sales and auctions that they have created debts through credit cards and other borrowing to the point of financial disaster. It is not hard to do. One woman was reported to have been

spending sixteen hours a day, every day on the Internet, buying. She ended up in bankruptcy court. Bad news! So self control, no matter how much we love our hobby is a must at all times.

Another area of concern are the folks out there you will be dealing with. Most are very honest and amicable. I feel that I have made some "cyberfriends" through the auctions. I have provided help to several people trying to fix an old set or looking for parts. A couple have assisted me also. Treat the person you are dealing with as you want to be treated. If you win an auction, send the seller an e-mail immediately acknowledging the fact to begin the exchange of information. Most importantly, **PAY YOUR BILL PROMPTLY.** Don't wait a week to send the check or money order. I have always sent the payment within forty-eight hours which is always appreciated and usually brings a very positive response. Keep in touch with the seller. Most will notify you when the item is shipped. Respond to that and notify the seller when your package arrives and about its condition. Shipping accidents do happen.

Occasionally you may encounter someone who is not so honest, doesn't provide details about flaws and will claim he never got any of your emails. So he sold the item to the next highest bidder, or if he is the bidder, never sends his money and claims you stole it from him! The auction companies provide legal processes to handle such problems if it becomes that serious. Remember that checks and money

orders leave a recorded paper trail. Keep records of all your transactions as either buyer or seller. Keep the emails. They are proof of the transactions and any statements made. I keep mine as computer files and each month transfer them to storage disks for permanent records. A months' worth of files is enough to clutter your computer hard drive with. You can print out all your data for records, but after a while a paper mountain builds to the point of being much more trouble than keeping everything electronically. Keep in mind that most auction pages have pictures which take a lot of your computers' memory to handle and display. So keep plenty of space available on the hard drive and in RAM. Storing pictures from the auction sites doesn't take too much space, and you can always compress the files for long term storage. But manipulating the pictures when downloaded to get the screen display takes a lot of memory space.

Most auction companies provide a system for public record in the auctions called "Feedback." This is a method by which, after an auction transaction has been completed, the buyer and seller can post "Feedback" about each other regarding the over all exchange between them. Most systems provide three categories, positive, neutral, and negative. Each allows a limited statement to be entered offering ones' opinion. Every registered auction member automatically gets a Feedback Page which is available to everybody to look at. This is to incite the desire to

be honest, courteous, responsive and appropriately grateful in all communications and dealings. Each buyer and seller can state his opinion of the other person for all the world to see! Always transact business with this in mind. The companies strongly recommend use of the feedback system.

When considering a bid on an auction, it is wise to check the seller's Feedback page before you bid. Its accessibility is just a mouse click away. There is always a line by the seller's ID which offers viewing of the seller's feedback. On eBay, there is also a number in parentheses after the ID or e-mail address if shown. Clicking on that number will bring up the feedback page. Look it over. See what kind of response record the seller has accumulated from other bidders. If there are negatives, try to find and read them to see what the problem was. Then use your judgement as to whether you want to deal with this person.

Another area to view is the other auctions this seller may be running simultaneously. Again there is a line to click on offering a complete list of the sellers' other auctions. Take a look here too because it will give you an idea of what kind of items he generally sells. If you find a page with dozens of items but only one or two radios, and no other associated offerings, be careful. Go back and read the information on the auction page carefully. This seller could be someone who has no real knowledge of antique radios and just happened upon one and is auctioning it. This

often leads to inaccurate or a lack of information due mainly to honest ignorance. This happens quite frequently. If you don't check it out beforehand, you may end up with a set with wrong knobs, missing its back and antenna, missing tubes, or damage that matters to you but wasn't recognized by him. I acquired a 1930 cathedral radio that was missing the speaker. There was no mention of it in the auction. The seller admitted having never handled an antique radio before which his records supported, and he wondered why there was so much empty space inside the cabinet! Fortunately the speaker is replaceable. He offered to take it back for a full refund or give a partial refund for the speaker. I took the partial.

Also offered on an active auction is the Bid History. This is simply a list of those who have placed bids on the item. It does not show the amounts of the bids, only the bidders' ID and the order of bid value. After an auction closes, the bid amounts are posted in the list. It may be worth checking this list in case a friend or associate is bidding on it who has similar interests. This can bring about a personal problem if not handled appropriately. It is always considerate to call the friend and discuss the matter before you bid against him. It is, however, against the rules of most auction companies to make prior agreements with others regarding bidding on items to avoid bidding against each other. It would seem that good friends would not take offense at the competition.

Some very rare and unusual radios have appeared on eBay during the months I have been participating. Even though I have attended many large swap meets and auctions around the country over the past ten years, I have never seen some of these sets. It appears that people who are not collectors or dealers are finding these old sets in Grandma's attic and offering them on the Internet. Of the roughly two hundred auctions I have entered, I have only encountered five or six sellers who belong to an antique radio club. There are many antiques dealers utilizing the auctions for virtually every kind of product. I have dealt with a few and so far have found them to be reputable and honest.

Quite a few dealers have private web sites where they offer radios for direct sale at an established price. I have listed a few at the end. I have done some business with a couple of them successfully, but these have been people I have met personally and have dealt with previously at swap meets.

Patience is always a virtue. Even though a transaction has gone smoothly, it may be quite a while before your new acquisition is shipped to you. If you paid by personal check, the seller will wait for the check to clear. This is certainly fair and reasonable. Sending a money order or a bank check will get faster results, but some are just slow to get the packing and shipping done. Being patient is worth while because you may encounter this seller again. So don't antagonize him with pushy emails about shipping. If several

weeks pass with no results, a polite inquiry is appropriate.

If you choose to begin selling items in the auctions, you will soon learn about the other side of the business. But the same practices apply; honesty, courtesy and responsiveness with good communications. This method will go a long way to a successful experience on the Internet. Good hunting, but don't abandon the swap meets and live auctions. They are still the most enjoyable of all. 

Some Antique Radio Websites:

New Era Antiques:

www.neweraantiques.com/overview.cgi?table_radios

PhotoPoint:

www.albums.photopoint.com/j/AlbumIndex?u=30855&a=859836

Radio Craze:

www.radiocraze.com

RadioGallery:

www.radiogallery.com/index.htm

Garmco:

www.garm.com/garmradio.htm

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WANTED: Edison Ticker Tape machines or the square ones made by ACE Electric. Also speaker horn for model E - Edison standard

phonograph. Also Ballast tubes D-110 or D-105. CECIL HOOPER, 242-4284.

ANTIQUE TUBES bought and sold. Includes brass base 201s and earlier and uncommon radio and transmitting tubes. GEORGE H. FATHAUER, 921-9961. See <http://members.home.net/fathauer>.

WANTED: "Tom Thumb" radios made by the Automatic Radio Company. All models. GEORGE A. FATHAUER, 116 N. Roosevelt, Suite 121, Chandler, AZ, 85226, 961-5176.

WANTED: Top quality signal generator, in working condition with manual. RICK MOUNTJOY, 926-8174.

HI! I'm looking for a schematic for a GE X216A table top wood cabinet radio, possibly a 1948-49 model. Also need a ballast tube (RR7013). This radio has "Made in the USA"

Read what happened



to these
two men

when I said:



You Can Write for the Radio Club News!

Your club's publication needs your contributions of articles, letters, photos and other materials of interest to members. Add a new dimension to your hobby by sharing your experiences, expertise, wisdom, common sense, opinions and observations with club members and other readers.

Here are a few ideas to get you going:

Collecting:

- Your first radio
- Great and impossible finds you have made
- Tips for making finds
- Tips for new collectors*
- Great finds that turned sour
- Tips to avoid making finds that turn sour
- Interviews or visits to club members

Experiences:

- How you got started in radio
- Experiences in radio's early days
- Early Arizona radio: stations, manufacturers, stores, personalities
- Interviews of radio pioneers
- Job experiences relating to radio

Technical:

- Cabinet restoration tips*
- Chassis repair tips*
- Great and impossible restorations
- Electronics for the beginning collector*

Technical help in question and answer format*

History:

- History of a set, a company or a station
- Development of circuits, tubes or components
- History of a design trend, i.e. art deco
- Any aspect of radio in Arizona history especially wanted

Photos:

- Unusual sets
- Recent acquisitions
- Before and after shots of a restoration
- Collections or swap meets visited
- Interesting radio related places visited

Commentary:

- The state of the hobby
- Letters to the editor
- Comments about articles seen
- Comments about the Radio Club News
- Opinions about prices

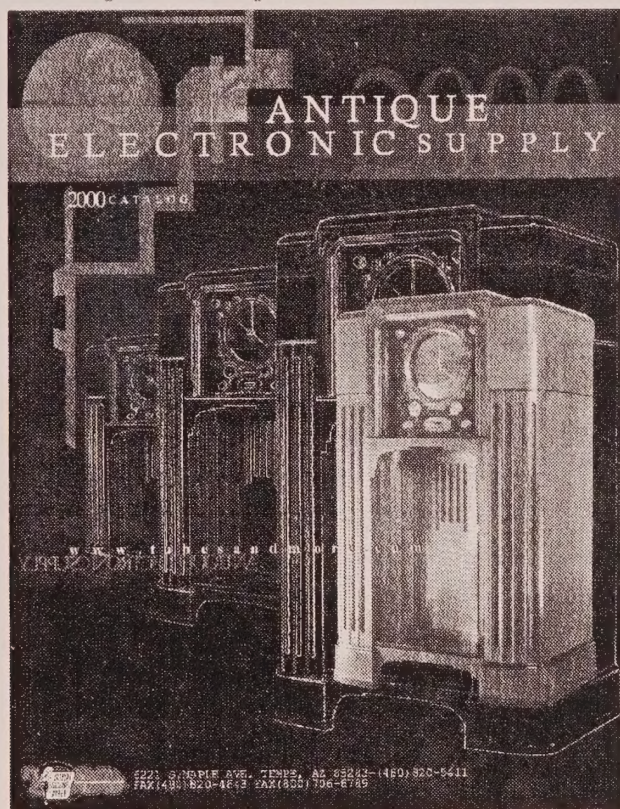
Items marked * could be subjects for regular features, if you are willing to make a commitment. Submissions can be typed or on computer disk (any format is OK), or emailed. Call or write the editor:

Bill Lettow (address on page 2)
lettow@yahoo.com

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had "one of those..."

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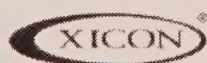


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